Source Water Assessment Program (SWAP) Report
For
FLORENCE SAWYER SCHOOL

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
June 29, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	FLORENCE SAWYER SCHOOL
PWS Address	100 MECHANIC STREET
City/Town	BOLTON
PWS ID Number	2034024
Local Contact	JAMES DUCHARME
Phone Number	(978) 779-0539

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	2034024	250	624	High

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

? inventory land uses within the recharge areas of all public water supply sources;
? assess the susceptibility of drinking water sources to contamination from these land uses; and
? publicize the results to provide support for improved protection.

Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attached Map of the Protection Areas

1. Description of the Water System

The well for the Florence Sawyer is located west of the school building, on undeveloped land owned and controlled by the town of Bolton. The well is a 1,100 feet deep bedrock well and has a Zone I of 250 feet and an Interim Wellhead Protection Area (IWPA) of 624 feet. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. The well serving the school has no treatment at this time. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **An underground storage tank (UST) with heating oil;**
2. **Septic system;**
3. **Athletic field;**
4. **Road; and**
5. **Stormwater drain**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA.

1. **Underground Storage Tank (UST)** – A 5,000 gallon UST with heating oil is within the IWPA. All tanks in close proximity to water supply wells should be upgraded to meet current construction standards. If managed improperly, Underground Storage Tanks can be a potential contaminant source due to leaks or spills of the chemicals they store.

   Recommendation:

✓ Any modifications to the UST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding USTs.

2. **Septic system** - The septic system for the school is located within the IWPA. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply. The school does have a working neutralization system to handle the wastes from the laboratories.

   Recommendation:

✓ Staff should be trained on proper disposal of hazardous materials. Include custodial staff, groundskeepers, and certified operator.

✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.

3. **Athletic field** - The athletic field is located within the IWPA. Over- application of

Table 2: Table of Activities within the Water Supply Protection Areas

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Elementary School	Fuel Storage Below Ground	No	Yes	High	Heating oil tank
	Septic System	No	Yes	Moderate	See septic systems brochure in the attachments
	Athletic Field	No	Yes	Moderate	Fertilizer and pesticide use
	Road	No	Yes	Moderate	Limit road salt usage and provide drainage away from wells
	Stormwater drain	No	Yes	Low	

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

pesticides and fertilizers on athletic fields is a potential source of contamination to the water supply.

Recommendation:

✓ Use BMPs for applying, handling, and storing pesticides and fertilizers.

4. **Road** - The access road to the school is within the IWPA. Roads are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.

✓ **Recommendations:**Use BMPs to minimize road salt use in the IWPA.

✓ Ensure local emergency response planning includes the roadway and IWPA.

5. **Stormwater drains** - Several stormwater drains are located within the IWPA. As flowing stormwater travels, it picks up debris and contaminants from the parking areas and road. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

Recommendation:

✓ Direct stormwater drain outflows away from the IWPA.

✓ Consider nonstructural techniques such as parking lot sweeping to reduce the amount of potential contaminants in storm water runoff.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Florence Sawyer School should review and adopt the following recommendations at the facility:

✓ Reduce or eliminate the use of pesticides, fertilizers or road salt within the IWPA.

Training and Education:

✓ Train staff on proper hazardous material disposal, emergency response, and best management practices.

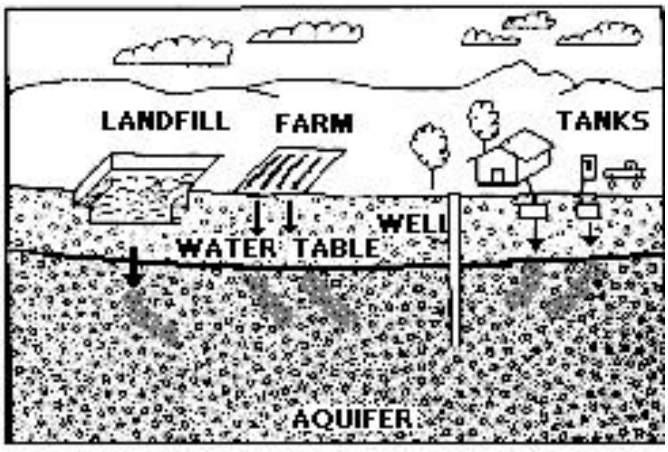

Figure 1: Example of how a well could become contaminated by different land uses and activities.

✓ Incorporate groundwater education into school curriculum A copy of the curriculum was hand delivered on the day of the land use assessment.

Facilities Management:

✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/brp/dws/dwspubs.html.

✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on the school property.

✓ Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices.

✓ The septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

Planning:

- ✓ Work with local officials in Bolton to include the Florence Sawyer School wells' IWPA in Aquifer Protection District Bylaws and other regulations and to assist you in improving protection.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Grant Protection Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the 2001 "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet from last year (Please note: each program year the Department posts a new Request for Response for the Grant program (RFR)).

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet
- Healthy Schools Fact Sheet
- Wellhead Protection Grant Program Fact Sheet